

58. The device of claim 56 wherein said sealing member overlaps at least a part of said first driver circuit.

CS 6/12/99
Cancel
59. The device of claim 56 wherein the same material as said sealing member is provided on at least said first driver circuit.

60. The device of claim 56 wherein said sealing member comprises an ultraviolet-curable resin.--

add K2

REMARKS

The Official Action dated December 15, 1999 has been received and its contents carefully noted. Claims 13-15, 18-22 and 24-46 were pending in the present application prior to the above amendment. New claims 50-60 have been added to recite additional protection to which Applicants are entitled. Accordingly, claims 13-15, 18-22, 24-46 and 50-60 are pending in the subject application and, for the reasons set forth in detail below, are now believed to be condition for allowance.

The present invention relates to a liquid crystal display device comprising both a display region (active matrix circuit) and a driver circuit for driving the display region. Pending claims 25, 35, 40 and 42 each recite the feature that a sealing member encloses the active matrix circuit and the driver circuit, and further recite that there is an inlet for injecting liquid crystal at a location at which no driver circuit is disposed. By providing the liquid crystal display device with this structure, the driver circuit can be prevented from being damaged by static electricity due to liquid crystal flow.

The Official Action initially rejects claims 25-39 under 35 U.S.C. § 103(a) as being unpatentable over Mawatari et al. (U.S. Patent No. 5,200,847) in view of Niki (U.S. Patent No. 5,278,682). This ground of rejection is traversed for the following reasons. In the Official Action, the Examiner asserts that the Mawatari et al. reference discloses a liquid crystal device

having a first substrate, a second substrate, active devices in an active display region, driver circuits, and a sealing member which at least partly covers the circuits, seals the liquid crystal, and which may optionally completely cover the circuits. The Examiner acknowledges that the Mawatari et al. reference fails to disclose or suggest an inlet for injecting liquid crystal between the substrates. To remedy this deficiency, the Examiner applies the Niki reference, stating that Niki discloses a fill port on aligned edges of the two substrates for permitting filling without immersion. The Examiner considered it obvious to an ordinary skilled artisan to combine the fill port of Niki with the device of Mawatari et al. to obtain Applicants' claimed device.

Applicants respectfully disagree with the Examiner's assertion that the Mawatari et al. reference discloses enclosing a driver circuit with a sealing member, as set forth in the claimed invention. Such a teaching is neither expressly taught or inherently present in the disclosure of Mawatari. Since the Mawatari et al. reference does not disclose or fairly suggest this feature, the device of Mawatari et al. does not recognize the unobvious advantages described above relating to the prevention of deleterious static electricity effects. Further, the Niki reference fails to even disclose the provision of a driver circuit on the substrate. For this reason, the Niki reference cannot be used to remedy the deficiency of the Mawatari et al. reference regarding a sealing member covering both the active matrix circuit and the driver circuit, as set forth in the present invention. Reconsideration and allowance of claims 25-39 is respectfully requested.

The Official Action next rejects claims 13-15, 18-22 and 24-46 under 35 U.S.C. §103(a) as being unpatentable over Stewart et al. (U.S. Patent No. 5,076,667) in view of Niki. This ground of rejection is traversed for the following reasons. In the Official Action, the Examiner asserts that it would have been obvious to modify the liquid crystal device of Stewart to employ a fill port at the aligned sides of the substrates, with two sides having the circuit, for the benefit of avoiding immersion of the substrate. Applicants respectfully disagree with the Examiner's assertions. In particular, Applicants note that it would not have been obvious to employ a fill port, as in Niki, at the aligned edges of the substrates of the device in Stewart et al., since Stewart et al. does not disclose first and second substrates having at least a pair of substantially aligned

side edges. Further, the Examiner asserts that it would have been obvious to use the side of the substrate without the circuit because the side with the circuit have a material enclosed in a sealant which would have been an obstruction from putting a port in there. However, Applicants note that the Stewart et al. reference clearly discloses sufficient space for injecting liquid crystal, at which a select scanner is disposed (see Stewart et al., FIG. 2). For this reason, it seems clear that the side with the circuit thereon would not include an obstruction preventing placement of a port thereon and, therefore, it would not have been obvious to use the side of the substrate without the circuit thereon. Based upon the teachings of the references, it seems clear that the only motivation to place Applicants' claimed inlet on the side of the substrate without the circuit appears in Applicants' own disclosure and, for this reason, the rejection should be withdrawn and the claims allowed.

Regarding the Examiner's assertion that the use of silver paste to connect electrodes is conventional, Applicants have reviewed the references cited by the Examiner to support this feature. Although the Hideshima et al. reference (JP 62-240934) discloses the use of silver paste to connect pattern electrodes on both substrates, the Hideshima et al. reference fails to disclose or suggest the claimed feature of utilizing silver paste to connect the driver circuit with the electrical element on the opposed substrate. Absent this teaching, or a suggestion related thereto, the cited reference do not appear to teach or suggest this claimed feature. Accordingly, reconsideration and allowance of claims 30, 35, 41 and 42 is respectfully requested.

Applicants note that the Official Action fails to address the claimed feature of claims 43, 44 and new claim 56, namely the provision of a driver circuit on the opposed substrate. None of the cited references appear to teach or suggest this feature, and therefore claims 43, 44 and 56 are considered allowable. Examination of these claims, on the merits, is respectfully requested.

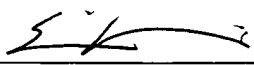
Applicant submit herewith a *Supplemental Information Disclosure Statement* including full English-language translations of the following previously cited references, for the Examiner's consideration: JP-066413 and JP 62-240934. Further, the IDS also includes an

additional reference (JP 4-355433) recently cited by a foreign patent office in a corresponding Japanese application. Consideration of these references is respectfully requested.

For all of the above reasons, the present application is believed to be in condition for allowance. If the Examiner has any questions concerning this application, he is invited to contact the undersigned.



Respectfully submitted,
NIXON PEABODY LLP


Eric J. Robinson
Registration No. 38,285

EJR:RCC/dkt
Attorney Docket No.: 0756-1553
NIXON PEABODY LLP
8180 Greensboro Drive, Suite 800
McLean, Virginia 22102

Telephone (703) 790-9110
Fax (703) 883-0370

F:\DATA\wp2\CLIENTS\0756\1553\Docs\2000-04-17 amendment.wpd

RECEIVED
APR 19 2000
TC 2800 MAIL ROOM